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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/982,272	12/01/1997	THOMAS J. KIPPS	231/003	9087
30542	7590	04/22/2003		
FOLEY & LARDNER P.O. BOX 80278 SAN DIEGO, CA 92138-0278			EXAMINER	
			GAMBEL, PHILLIP	
ART UNIT		PAPER NUMBER		
1644		35		
DATE MAILED: 04/22/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.	Applicant(s)
08/982,272	KIPLING
GAMBEL	1644

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 2/1/63
  - 2a)  This action is FINAL.      2b)  This action is non-final.
  - 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.
- Disposition of Claims**
- 4)  Claim(s) \_\_\_\_\_ is/are pending in the application. 11-66, 68-81, 87, 93-95, 97-100, 111, 113,
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration. 115, 116, 137-144
  - 5)  Claim(s) \_\_\_\_\_ is/are allowed. → 11-66, 68-81
  - 6)  Claim(s) \_\_\_\_\_ is/are rejected. → 87-90, 93-95, 97-100, 111, 113, 115, 116, 137-144
  - 7)  Claim(s) \_\_\_\_\_ is/are objected to. → 87-90, 93-95, 97-100, 111, 113, 115, 116, 137-144
  - 8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement. 137-144

**Application Papers**

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner. *SEE OFFICE ACTION*  
*Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).*
- 11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved by the Examiner.  
*If approved, corrected drawings are required in reply to this Office action.*
- 12)  The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All
  - b)  Some \*
  - c)  None of:
  1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.
- 14)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - a)  The translation of the foreign language provisional application has been received.
- 15)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

#### DETAILED ACTION

1. Applicant's amendment, filed 2/11/03 (Paper No. 34), has been entered.

Claims 88-90, 92, 96, 101-110, 112, 114, 117-122 and 137-140 have been canceled.  
Claims 1-10, 67 and 83-86, 91, 112 and 123-136 have been canceled previously

Claims 87, 93, 94, 95, 97, 98, 99, 100, 111, 113 and 116 have been amended.

Claims 141-144 have been added.

Claims 11-66, 68-82, 87, 93-95, 97-100, 111, 113, 115, 116, and 137-144 are pending.

In the interest of compact prosecution, claims 87-90, 93-95, 97-100, 111, 113, 115, 116 and 137-144 are under consideration in the instant application s they read on the elected Group and species as well as to advance prosecution those claims which read on introducing the combination of both mouse and human CD40L into CD40 expressing cells.

As indicated previously, claims 11-66, 68-82 have been withdrawn from further consideration by the examiner, 37 C.F.R. § 1.142(b) as being drawn to the nonelected inventions and/or species.

2. The text of those sections of Title 35 USC not included in this Action can be found in a prior Action. This Office Action will be in response to applicant's arguments, filed 2/11/03 (Paper No. 34). The rejections of record can be found in the previous Office Action (Paper No. 30).
3. Formal drawings have been submitted which fail to comply with 37 CFR 1.84. Please see the enclosed form PTO-948.

#### INFORMATION ON HOW TO EFFECT DRAWING CHANGES

##### A. Correction of Informalities -- 37 CFR 1.85

New corrected drawings must be filed with the changes incorporated therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings MUST be filed within the THREE MONTH shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

B. Corrections other than Informalities Noted by Draftsperson on form PTO-948.

All changes to the drawings, other than informalities noted by the Draftsperson, MUST be made in the same manner as above except that, normally, a highlighted (preferably red ink) sketch of the changes to be incorporated into the new drawings MUST be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office Action. See 37 CFR 1.185(a). Failure to take corrective action within the set (or extended) period will result in ABANDONMENT of the application.

Applicant's amendment, filed 2/11/03 (Paper No. 34), notes that substitute drawings are being prepared. Applicant is reminded of the requirements to take corrective action timely.

4. Claims 87-90, 93-95, 97-100, 111, 113, 115, 116 and 137-144 are rejected under 35 U.S.C. § 112, first paragraph, as the specification does not contain a written description of the claimed invention, in that the disclosure does not reasonably convey to one skilled in the relevant art that the inventor(s) had possession of the claimed invention at the time the application was filed. The specification as originally filed does not provide support for the invention as now claimed: "one or more".

Applicant's amendment, filed 2/11/03 (Paper No. 34), does not appear to provide sufficient direction as to the written support for "one or more" with respect to human and murine CD40 ligand genes and domains recited in the instant methods.

The specification as filed does not appear to provide sufficient written description nor provide sufficient direction for the instant methods encompassing the above-mentioned "one or more" "limitations" as currently recited. The instant claims now recite limitations which were not clearly disclosed in the specification as-filed, and now change the scope of the instant disclosure as-filed. Such limitations recited in the present claims, which did not appear in the specification, as filed, introduce new concepts and violate the description requirement of the first paragraph of 35 U.S.C. 112.

Applicant is required to cancel the new matter in the response to this Office action

Alternatively, applicant is invited to provide sufficient written support for the "limitations" indicated above. See MPEP 714.02 and 2163.06

5. Claims 87-90, 93-95, 97-100, 111, 113, 115, 116 and 137-144 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

It is noted that this is a written description rejection under 35 U.S.C. 112, first paragraph

The claims are directed to "murine CD40L ligand gene", which do not meet the written description provision of 35 USC 112, first paragraph. There is insufficient guidance and direction as to the written description of "a murine CD40 ligand gene" intended and encompassed by the claimed methods.

Applicant's amendment, filed 2/11/03 (Paper No. 34), relies upon the disclosure of the specification and that there is a substantially amount of sequence homology among murine CD40 strains, such that one of ordinary skill in the art can easily derive one from another (e.g. through hybridization under low stringency conditions; page 25, lines 13-25 of the specification).

This is not found convincing essentially for the reasons of record which are reiterated herein for applicant's convenience.

In addition, applicant has not provided sufficient objective evidence to support the genus of "murine CD40L ligand genes", encompassed by the claimed invention. For example, it is not clear whether or how many other members encompassed murine CD40 ligand genes were known at the time the invention was made.

For example, page 24 of the specification discloses that the present invention contemplates the use of accessory molecules such as CD40L which is homologous to a particular SEQ ID NO and thus hybridizes to this sequence present at low stringency hybridization conditions.

Pages 24-25 of the specification discloses that the size of a particular segment derived from the different accessory molecule ligand genes may vary from a nucleotide sequence encoding a few amino acids, a sub-domain of the accessory molecule ligand, a domain of the accessory molecule ligand or more than a domain of an accessory molecule ligand.

While the specification discloses "mouse CD40 ligand", there appears insufficient written description for any "murine CD40 ligand gene", including homologous sequences to mouse under low stringency hybridization conditions.

Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, makes clear that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the 'written description' inquiry, whatever is now claimed." (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See Vas-Cath at page 1116.)

The skilled artisan cannot envision the detailed chemical structure of the encompassed "members of the tumor necrosis factor family" and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method for isolating it. For example the nucleic acid itself is required. See Fiers v. Revel, 25 USPQ2d 1601, 1606 (CAFC 1993) and Amgen Inc. V. Chugai Pharmaceutical Co. Ltd., 18 USPQ2d 1016.

One cannot describe what one has not conceived. See Fiddes v. Baird, 30 USPQ2d 1481, 1483. In Fiddes v. Baird, claims directed to mammalian FGF's were found unpatentable due to lack of written description for the broad class. The specification provided only the bovine sequence. Thus, the specification fails to describe these DNA sequences. The Court further elaborated that generic statements are not an adequate written description of the genus because it does not distinguish the claimed genus from others, except by function. Finally, the Court indicated that while applicants are not required to disclose every species encompassed within a genus, the description of a genus is achieved by the recitation of a representative number of DNA molecules, defined by nucleotide sequence, falling within the scope of the genus, See The Regents of the University of California v. Eli Lilly and Company, 43 USPQ2d 1398, 1406 (Fed. Cir. 1997).

Applicant is claiming a broad generic class of molecules encompassing "a murine CD40 ligand gene", and "domains or subdomains" thereof based upon the support of the disclosure of the limited representative species of mouse CD40 ligand (e.g., specific SEQ ID NOS for mouse CD40L and domains I, II, III and IV). The instant invention encompasses any "murine CD40 ligand gene" and "domain or subdomain" thereof, yet the instant specification does not provide sufficient written description as to the critical structural features of the recited "limitations" and the correlation between the chemical structure and the desired structural and/or function.

Applicant is relying upon certain structural and/or biological activities and the disclosure of a limited representative number of species (e.g. mouse CD40 ligand only) to support an entire genus of murine CD40 ligand. The reliance on the disclosed limited example of the particular mouse member of the "murine CD40 ligand" and "domain or subdomain" thereof and screening under low stringency hybridization conditions does not support the written description of any "member" of these "murine CD40 ligand".

For example, it has been well known that minor structural differences even among structurally related compounds or compositions can result in substantially different biological or pharmacological activities.

Mere idea or function is insufficient for written description; isolation and characterization at a minimum are required

Other than asserting homology, the instant specification and claims do not provide sufficient functional characteristics coupled with a known or disclosed correlation between function and structure. Since the disclosure fails to describe the common attributes or characteristics that identify members of the genus of murine CD40 ligand and because the genus can be highly variable, the disclosure of the particular "mouse CD40 ligand" is insufficient to describe the genus of molecules, encompassed by the claimed invention.

Since the amino acid sequence of a polypeptide determines its structural and functional properties, predictability of which changes can be tolerated in a nucleic acid encoding a polypeptide's amino acid sequence and still retain similar functionality requires a knowledge of and guidance with regard to which amino acids in the polypeptide's sequence, if any, are tolerant of modification and which are conserved, and detailed knowledge of the ways in which a polypeptide's structure relates to its functional usefulness. However, the problem of predicting a polypeptide structure from the disclosure of a limited sequence or a limited number of molecules disclosed in the specification as-filed and, in turn, utilizing predicted structural determinations to ascertain binding or functional aspects of the claimed "CD40 ligand receptor", "domain or subdomain" of "non-human CD40 ligand" and finally what changes can be tolerated with respect thereto is complex.

A person of skill in the art would not know which sequences are essential, which sequences are non-essential, and what particular sequence lengths identify essential sequences for increasing the stability on the surface of the cell relative to that of a mouse CD40 ligand, for example. There is insufficient guidance based on in vitro characterization assays to direct a person of skill in the art to select particular sequences as essential for increasing the stability on the surface of the cell relative to that of a mouse CD40 ligand, for example. A person of skill in the art could not envision which particular nucleic acids encoding amino acid sequences of "murine CD40 ligand" and "domain or subdomain" thereof are essential and could be used in methods of expressing a murine CD40 ligand in a human cell and, in turn, which nucleic acids encoding "murine CD40 ligand" and "domain or subdomain" thereof for increasing the stability on the surface of the cell relative to that of a human CD40 ligand

Skolnick et al. (Trends in Biotech., 18(1):34-39, 2000) disclose that the skilled artisan is well aware that assigning functional activities for any particular protein or protein family based upon sequence homology is inaccurate, in part because of the multifunctional nature of proteins (e.g., "Abstract" and "Sequence-based approaches to function prediction", page 34). Even in situations where there is some confidence of a similar overall structure between two proteins, only experimental research can confirm the artisan's best guess as to the function of the structurally related protein (see in particular "Abstract" and Box 2). Thus an assignment of function based upon sequence homology or identity without further functional analysis does not appear to provide sufficient written description for the claimed "murine CD40 ligand genes" and "domain or subdomain" thereof encoding nucleic acids.

The Guidelines for the Examination of Patent Applications Under the 35 U.S.C. 112, ¶ 1 "Written Description" Requirement make clear that if a claimed genus does not show actual reduction to practice for a representative number of species; then the Requirement may be alternatively met by reduction to drawings, or by disclosure of relevant, identifying characteristics, i.e., structure or other physical and or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show the applicant was in possession of the genus (Federal Register, Vol. 66, No. 4, pages 1099-1111, Friday January 5, 2001, see especially page 1106 column 3).

In the absence of structural characteristics that are shared by members of the genus of "murine CD40 ligand gene" and "domain or subdomain" thereof, one of skill in the art would reasonably conclude that the disclosure fails to provide a representative number of species to describe the genus / genuses. Thus, applicant was not in possession of the claimed genus / genuses. See University of California v. Eli Lilly and Co. 119 F.3d 1559, 43 USPQ2d 1398 (Fed. Cir. 1997).

Applicant is reminded that Vas-Cath makes clear that the written description provision of 35 USC 112 is severable from its enablement provision. (See page 1115.)

Applicant is directed to the Guidelines for the Examination of Patent Applications Under the 35 U.S.C. 112, ¶ 1 "Written Description" Requirement, Federal Register, Vol. 66, No. 4, pages 1099-1111, Friday January 5, 2001.

Applicant's arguments are not found persuasive.

6. Claims 87-90, 93-95, 97-100, 111, 113, 115, 116 and 137-144 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for "mouse CD40 ligand gene" and "domains" thereof for expressing CD40 ligand into human CD40 ligand receptor bearing cells, does not reasonably provide enablement for any "murine CD40 ligand gene" and "domain and/or subdomains thereof" that would enable the expression of CD40 ligand in a human cell, including increasing the stability on the surface of the cell relative to that of a human CD40 ligand.

Applicant's amendment, filed 2/11/03 (Paper No. 34), relies upon the disclosure of the specification and that there is a substantially amount of sequence homology among murine CD40 strains, such that one of ordinary skill in the art can easily derive one from another (e.g. through hybridization under low stringency conditions; page 25, lines 13-25 of the specification).

This is not found convincing essentially for the reasons of record which are reiterated herein for applicant's convenience

The specification does not enable any person skilled in the art to which it pertains, or with which it is most clearly connected, to make and use the invention commensurate in scope with these claims.

There is insufficient guidance and direction as to the enablement of any "murine CD40 ligand gene" and "domain or subdomain" thereof intended and encompassed by the claimed methods.

For example, page 24 of the specification discloses that the present invention contemplated the use of accessory molecules such as CD40L which is homologous to a particular SEQ ID NO and thus hybridizes to this sequence present at low stringency hybridization conditions.

Pages 24-25 of the specification discloses that the size of a particular segment derived from the different accessory molecule ligand gene may vary from a nucleotide sequence encoding a few amino acids, a sub-domain of the accessory molecule ligand, a domain of the accessory molecule ligand or more than a domain of an accessory molecule ligand.

While the specification discloses "mouse CD40 ligand", there appears insufficient enablement for any "murine CD40 ligand gene". Applicant has not provided sufficient biochemical information (e.g. molecular weight, amino acid composition, N-terminal sequence, etc.) that distinctly identifies "murine CD40 ligand genes" other than "mouse CD40 ligand".

Since the amino acid sequence of a polypeptide determines its structural and functional properties, predictability of which changes can be tolerated in a polypeptide's amino acid sequence and still retain similar functionality (e.g. domain and subdomains of CD40 ligand) by expressing or increasing the concentration and/or increasing the stability of CD40 ligand on CD40 expressing cells requires a knowledge of and guidance with regard to which amino acids in the polypeptide's sequence, if any, are tolerant of modification and which are conserved (i.e. expectedly intolerant to modification), and detailed knowledge of the ways in which a polypeptide's structure relates to its functional usefulness. However, the problem of predicting the ability of various domains and subdomains of any CD40 ligand to enable the expression or increased stability of CD40 ligand on a CD40 expressing cells from the limited examples disclosed in the specification as filed, and in turn, utilizing predicted structural determinations to ascertain the expression and functional aspects of CD40 ligand, and finally what changes can be tolerated with respect thereto is complex and well outside the realm of routine experimentation. In re Fisher, 166 USPQ 18 indicates that the more unpredictable an area is, the more specific enablement is necessary in order to satisfy the statute.

The skilled artisan would not know which sequences are essential, which sequences are non-essential, and what particular sequence lengths identify essential sequences. There is insufficient guidance based on in vitro characterization assays to direct a person of skill in the art to select particular sequences as essential for in vivo characterization of their ability to express or increase the concentration and/or increase the stability of CD40 ligand on CD40 expressing cells.

In re Fisher, 166 USPQ 18 (CCPA 1970). indicates that the more unpredictable an area is, the more specific enablement is necessary in order to satisfy the statute. It has been well known to those skilled in the art at the time the invention was made that minor structural differences among structurally related compounds or compositions can result in substantially different pharmacological activities. The relationship between the sequence of a peptide and its tertiary structure (i.e. its activity) was not well understood and was not predictable (e.g. see Ngo et al., in The Protein Folding Problem and Tertiary Structure Prediction, 1994, Merz et al., (ed.), Birkhauser, Boston, MA, pp. 433 and 492-495.); it would require an undue amount of experimentation for one of skill in the art to arrive at the breadth of "domains" and particularly "subdomains" with the ability to express or increase the concentration and/or increase the stability of CD40 ligand on CD40 expressing cells. Without sufficient guidance, the changes which can be made in the structure of "domains" and "subdomains" or CD40 ligand, including any murine CD40 ligand gene and still provide for increased stability and the ability to increase the expression of CD40 ligand in human cells is unpredictable and the experimentation left to those skilled in the art is unnecessarily, and improperly, extensive and undue

Applicant is invited to amend the claims to recite "mouse CD40 ligand"; to recite the specific enabled domains I, II, III and IV, as appropriate; and to recite the specific SEQ ID NOS. of the particular enabled "mouse CD40L" based upon the support of the instant disclosure .

Applicant's arguments are not found persuasive.

7. Upon reconsideration of applicant's amended claims and arguments filed 2/11/03 (Paper No. 34), the previous rejections under 35 U.S.C. § 112, second paragraph, have been withdrawn.

8. Upon reconsideration of applicant's amended claims and arguments, filed 2/11/03 (Paper No. 34), the previous rejection under 35 U.S.C. § 102(e) as being anticipated by Maraskovsky et al. (U.S. Patent No. 6,017,572) and under 35 U.S.C. § 103(a) as being unpatentable over Freeman et al. (U.S. Patent No. 5,861,310) in view of Yellin et al. (J. Immunol., 1994) and Alderson et al. (J. Exp. Med. 178: 669-674, 1993) ,Spriggs et al. (U.S. Patent No. 6,016,832), Maraskovsky et al. (U.S. Patent No. 6,017,572) as well as pages 40-53 of the instant specification which acknowledges that the general methods of providing chimeric/gene therapy constructs as well as manipulating cells were known and practiced at the time the invention was made have been withdrawn.

9. No claim is allowed.

It appears that there was insufficient motivation to incorporate the combination of both mouse and human CD40L elements into a CD40 expressing cell, including CLL cells at the time the invention was made.

Applicant is invited to provide claims drawn methods of introducing a combination of mouse and human CD40L elements into CD40 expressing cells, taking into account issues set forth herein under 35 USC 112, first paragraph(s).

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10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip Gambel whose telephone number is (703) 308-3997. The examiner can normally be reached Monday through Thursday from 7:30 am to 6:00 pm. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (703) 308-3973. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center 1600 receptionist whose telephone number is (703) 308-0196.

Papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center telephone number is (703) 305-3014.

*Phillip Gambel*  
Phillip Gambel, PhD.  
Primary Examiner  
Technology Center 1600  
April 18, 2003